

CLAIMS

1. A process for modifying a pectin comprising

(i) providing a host having PME activity and PG activity;

(ii) transforming said host by silencing PG activity thereby to provide an increased PME to PG ratio;

(iii) preparing a PME extract from the transformed host;

(iv) using the PME extract to modify pectin.

2. A process according to claim 1 wherein the activity of the native PG enzyme is silenced by expression of all or part of a nucleotide sequence in an antisense orientation.

3. A process according to claim 1 or claim 2 wherein the activity of the native PG enzyme comprising the amino acid sequence presented as SEQ.I.D. No. 2 or a variant, homologue or fragment thereof is silenced by expression of all or part of a nucleotide sequence in an antisense orientation.

4. A process according to claim 1 or claim 2 wherein the activity of the native PG enzyme comprising the amino acid sequence presented as SEQ.I.D. No. 2 is silenced by expression of all or part of a nucleotide sequence in an antisense orientation.

5. A process according to any one of the preceding claims wherein the activity of the native PG enzyme is silenced by expression of all or part of a nucleotide sequence comprising the sequence presented as SEQ.I.D. No. 1 or SEQ ID No 3 or SEQ ID No 4 or a variant, homologue, fragment or derivative thereof in an antisense orientation.

6. A process according to any one of the preceding claims wherein the activity of the native PG enzyme is silenced by expression of all or part of a nucleotide sequence

comprising the sequence presented as SEQ.I.D. No. 1 or SEQ ID No 3 or SEQ ID No 4 in an antisense orientation sequence.

7. A process according to any one of the preceding claims wherein the activity of the native PG enzyme is silenced *in planta*.

8. A process according to any one of the preceding claims wherein the process includes the further step of isolating the PME modified pectin from the active PME.

9. A process according to claim 8 wherein the PME modified pectin is a high ester pectin.

10. A process according to claim 8 or claim 9 wherein the PME modified pectin contains from about 55% to about 85% ester groups.

11. A process according to any one of claims 8 to 10 wherein the PME modified pectin contains from about 70% to about 80% ester groups.

12. A process according to any one of claims 8 to 11 wherein the PME modified pectin contains from about 72% to about 80% ester groups.

13. A process according to any one of claims 9 to 12 wherein the PME modified pectin contains from about 76% to about 80% ester groups.

14. A process according to any one of the preceding claims wherein the process includes the further step of adding the PME modified pectin to a medium that is suitable for consumption.

15. A process according to claim 14 wherein the medium is an acidic environment.

16. A process according to claim 15, wherein the acidic environment has a pH of from about 3.5 to about 5.5, preferably wherein the acidic environment has a pH of from 4 to about 5.5.

17. A process according to claim 16, wherein the acidic environment has a pH of about 4.

18. A process according to any one of claims 15 to 17 wherein the medium is an aqueous solution.

19. A process according to claim 18 wherein the aqueous solution is a beverage.

20. A process according to claim 19 wherein the beverage is an acidified milk beverage, a drinking yoghurt, a fruit juice, milk beverage or a beverage comprising whey protein or a vegetable protein such as soya.

21. A process according to any one of claims 18 to 20 wherein the medium comprises a protein.

22. A process according to claims 21 wherein the protein is derived from or is derivable from or is in a dairy product, such as milk or cheese.

23. A process according to claim 22 wherein the protein is casein or whey protein or a vegetable protein such as soya.

24. A PME modified pectin produced by the process of any one of the preceding claims.

25. A foodstuff comprising a PME modified pectin prepared by the process according to any one of the claims 1-24.

26. A PME modified pectin according to claim 24 or as defined in claim 25 wherein the pectin has a molecular weight from about 50kDa to about 200kDa.

27. A PME modified pectin according to claim 26 wherein the pectin has a molecular weight of about 100kDa.

28. A transformed host as defined in claim 1 comprising a construct comprising promoter and termination sequences operable in plant cells and there between an nucleotide sequence comprising all or part of SEQ ID No 1 or SEQ ID No 3 or SEQ ID No 4 or a variant, homologue or fragment thereof in an antisense orientation.

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29. A transformed host according to claim 28 wherein the host is a plant.

30. A transformed host according to claim 28 or claim 29 wherein the host is a tomato.

10 31. Use of a PME as defined in claim 1 to reduce the number of ester groups in a pectin and in a block-wise manner.

32. Use of a PME as defined in claim 1 to de-esterify two or more adjacent galacturonic acid residues of a pectin on at least substantially all of the pectin chains.

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33. Use of a PME modified pectin according to claim 24 or claim 26 or claim 27 to impart an increased functionality to food products such as yoghurt, milk/fruit juice and whey drinks wherein the food products have an improved viscosity and a longer shelf-life.

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